COMMENT ON THE USE OF CELLULAR/PCS PHONES ON COMMERCIAL AIRCRAFT

In regard to the proposed use of cellular/PCS phones on commercial aircraft, the Federal Communications Commission (FCC) appears to concern itself solely with the issue of radio frequency (RF) interference as it pertains to the sophisticated electronic and navigation equipment aboard today's aircraft; however, it has nowhere stated its concerns about at least two other important related issues:

1. The Effect of RF on Humans Located Within the Aircraft
2. The Possibility of Using a Cellular Device to Detonate an Explosive Device Aboard the Aircraft

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1. While the experts may disagree, recent studies raise serious issues about the effect of RF on the human body. And granted most studies focus only on the effect of RF on the immediate cellular phone user, the real question is what effect RF will have on the surrounding passengers in a confined area like that of an aircraft fuselage. One of these more recent studies is listed here:

Mobile Phone Radiation Harms DNA, New Study Finds
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MUNICH/AMSTERDAM (Reuters) - Radio waves from mobile phones harm body cells and damage DNA in laboratory conditions, according to a new study majority-funded by the European Union, researchers said on Monday. The so-called Reflex study, conducted by 12 research groups in seven European countries, did not prove that mobile phones are a risk to health but concluded that more research is needed to see if effects can also be found outside a lab. The $100 billion a year mobile phone industry asserts that there is no conclusive evidence of harmful effects as a result of electromagnetic radiation. About 650 million mobile phones are expected to be sold to consumers this year, and over 1.5 billion people around the world use one.

The research project, which took four years and which was coordinated by the German research group Verum, studied the effect of radiation on human and animal cells in a laboratory. After being exposed to electromagnetic fields that are typical for mobile phones, the cells showed a significant increase in single and double-strand DNA breaks. The damage could not always be repaired by the cell. DNA carries the genetic material of an organism and its different cells. "There was remaining damage for future generation of cells," said project leader Franz Adlkofer. This means the change had procreated. Mutated cells are seen as a possible cause of cancer.

The radiation used in the study was at levels between a Specific Absorption Rate (SAR) of between 0.3 and 2 watts per kilogram. Most phones emit radio signals at SAR levels of between 0.5 and 1 W/kg. SAR is a measure of the rate of radio energy absorption in body tissue, and the SAR limit recommended by the International Commission of Non-Ionizing Radiation Protection is 2 W/kg. The study also measured other harmful effects on cells.

2. Most likely the use of a cellular telephone aboard a commercial aircraft will require an internal “repeater” mounted within the aircraft, along with some type of antenna for transmission to a satellite or earth-based ground antenna. Whether incoming calls will be permitted is also not clear. Nevertheless, an improvised explosive device (IED) secreted aboard the aircraft could be detonated by a cellular telephone, either by a passenger aboard the aircraft making an outgoing call, or a person on the ground “calling into the aircraft.” Although terrorist organizations have been known to use altimeter-based barometric devices in previous IED attacks against aviation, the use of a cellular phone as a trigger may prove more accurate or easier to control than such an altimeter-based device. The accuracy of the an altimeter-barometric device is uncertain, however, and it is unclear whether an IED would detonate at the desired altitude.

The FCC needs to conduct serious inquiries into both of these areas before use of cellular/PCS phones are permitted on commercial aircraft.